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THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A rotor assembly for a self propelling pool cleaner including a housing having a water inlet orifice and a water outlet orifice, a rotor within the housing including a plurality of vanes defining a plurality of spaces between adjacent vanes each vane having pressure sealing means forming a pressure seal between adjacent spacers when said pressure sealing means is in contact with an internal wall of the housing wherein a negative static water pressure applied at the outlet orifice leads to a differential water pressure between two adjacent spaces causing rotation of the rotor;

wherein the vanes include stiffening means to support the vanes against the differential pressure, said stiffening means including a discrete stiffening member for each of said vanes; and

wherein the stiffening members include at least one suction channel providing fluid communication between adjacent spaces and a deformation face adjacent to the relevant vane such that on application of the differential pressure the vane is drawn towards the at least one suction channel so as to contact the deformation face and so deform the vane and seal the suction channel against further fluid communication wherein said deformed shape of said vane imparts a greater flexural stiffness to the vane as compared to the undeformed shape.

2. The rotor assembly according to claim 1, wherein the stiffening member supports the vanes against the differential pressure by supporting at least a portion of the length of the relevant vane.

3. The rotor assembly according to claim 2, wherein the portion of the length is in the range of 50% to 75% of the length of the vane.

4. The rotor assembly according to any one of the preceding claims, wherein the stiffening means further includes a means to selectively stiffen the relevant vanes on application of the differential pressure.

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5. The rotor assembly according to claim 4, wherein the selective stiffening means includes reshaping of the geometric shape of the vanes so as to increase the flexural stiffness of said vanes.

6. The rotor assembly according to any one of the preceding claims wherein the housing is divided into a driving zone defined by an arc formed by the sweep of the vanes between the inlet and the outlet and a return zone defined by an arc defined by the sweep of the vanes from the outlet to the inlet wherein a differential pressure between adjacent spacers is only formable in the driving zone.

7. The rotor assembly according to claim 6, wherein the vanes are adapted to have a maximum stiffness in the driving zone and a minimum stiffness in the return zone, so as to be resiliently flattened in the return zone.

8. The rotor assembly according to claim 7, wherein the distance from an axis of the rotor to an internal wall of the housing is substantially the same as the length of the vanes in the driving zone and substantially less than the length of the vanes in the return zone whereupon the vanes resiliently flatten in the return portion due to contact with the internal wall.

9. The rotor assembly according to any one of the preceding claims wherein the vanes are made from a very flexible visco-elastic material.

10. The rotor assembly according to claim 9, wherein said very flexible visco-elastic material includes silicone, polyurethane and rubber.

11. The rotor assembly according to any one of claims 4 to 10, wherein the vanes are adapted to buckle so as to permit the passage of an object of substantial size from the inlet to the outlet through the driving zone.

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12. The rotor assembly according to claim 11, wherein said object has a maximum dimension of at least 50 percent of the length of the vanes.

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